

*AN UNEXPECTED EFFECT OF RECORDING
FREQUENCY IN REACTIVE SELF-MONITORING*

THOMAS S. CRITCHFIELD

ILLINOIS STATE UNIVERSITY

Two young competitive swimmers self-monitored their swimming using three different frequencies of recording. Contrary to the findings of previous studies, in which greater reactivity was associated with more frequent recording, swimming appeared to increase (compared to an instructions-only baseline) only with the least frequent of the recording schedules. The results highlight the importance of matching recording procedures to the performance of interest.

DESCRIPTORS: self-monitoring, children, swimming

Self-monitoring can lead to reactive changes in the recorded behavior. This bane of assessment can be a boon during intervention, because reactive changes typically are in socially desirable directions (e.g., Nelson, 1977). In isolation, this behavior change can be transitory and modest in size (e.g., Critchfield & Vargas, 1991), but the low cost and effort of self-monitoring make it a useful adjunct to other interventions. Accordingly, attempts have been made to identify characteristics of the self-monitoring process that contribute to reactivity. For example, some writers have suggested that reactivity is maximized when recording is frequent (e.g., Nelson, 1977), but this conclusion is based on only a few studies involving low-effort, sedentary target behaviors of adults, such as cigarette smoking (Frederiksen, Epstein, & Kosevsky, 1975) and academic performance (Mahoney, Moore, Wade, & Moura, 1973). In the present report, self-monitoring, under three schedules of recording, was used to promote swimming by members of a children's competitive swimming team. Would previously reported

effects of recording frequency be replicated with children performing a qualitatively different kind of target behavior?

METHOD

Methods closely followed those of Critchfield and Vargas (1991). Two competitive swimmers, Jason (age 11) and Karen (age 12), participated in a study conducted during regular team workouts. Approximately 3 to 7 of roughly a dozen swimmers in the workout group participated in each session. Near the end of a 90-min workout, swimmers were taken from the main pool to a diving pool (15 m long, 4 m deep) and were told by the coach to enter the water spaced about 2 m apart. The coach sat atop a 3-m-high diving board extending above the pool and recorded lengths swum. Interrater agreement was not assessed, but previous studies using similar procedures and the same coach-recorder produced near-perfect agreement (Critchfield, 1989; Critchfield & Vargas, 1991). Sessions lasted 10 min.

Performance without self-monitoring was assessed in a baseline phase (sessions began with an instruction to enter the water) and an instructions phase (sessions began with the instruction, "Swim as many lengths as you can"). During the self-monitoring phase, swimmers marked their lengths swum

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Address correspondence to T. Critchfield, Department of Psychology, Illinois State University, Normal, Illinois 61790 (E-mail: tscritc@ilstu.edu).

with wax pencil on an individual waterproof clipboard suspended near the water's surface at one end of the pool. Recording consisted of placing a slash on the waterproof board and required approximately 5 s to complete. At the end of each session, each swimmer transferred his or her total to an individual graph posted on the wall at poolside. Because some members of the workout group were young, and because recording by some young swimmers in a previous study had been inaccurate (Critchfield & Vargas, 1991), several sessions at the start of this phase were devoted to acquainting the children with procedures such as remembering to record as instructed and recording only on one's own board. No data were collected during these training sessions.

For Jason, the self-monitoring phase followed a strict alternating treatments format, with frequency of self-monitoring varying across sessions (every two lengths, every four lengths, and at session's end only). Jason also completed a brief return to the instructions phase at the conclusion of this phase. Karen first completed a series of sessions recording after every two lengths and then a series in which recording every four lengths alternated with recording at session's end only.

RESULTS AND DISCUSSION

Figure 1 shows lengths swum per 10-min session across the different phases as recorded by the coach. Participants swam little during baseline and about 10 lengths per session during the instructions phase. During the self-monitoring phase, swimming increased to about 15 lengths per session when recording took place at session's end, but otherwise did not change systematically from levels during the instructions phase. This outcome was distinct for Karen and apparent for Jason as a general tendency within appreciable between-session variability.

In showing greater reactivity with less fre-

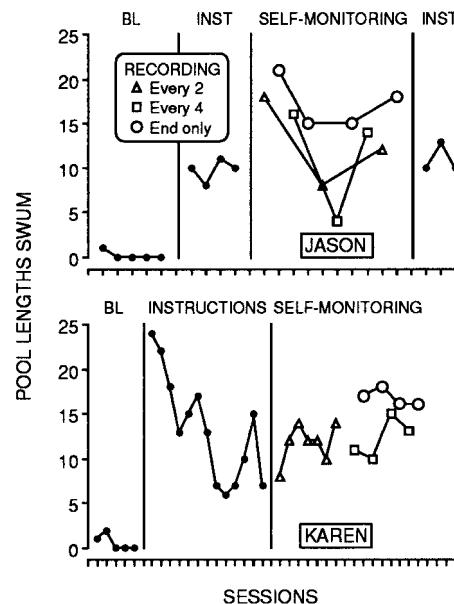


Figure 1. Pool lengths swum per session during phases with no self-monitoring (filled data points) and during self-monitoring (open data points). In the legend, recording frequency refers to the number of lengths swum prior to each instance of recording. The abscissa shows successive sessions attended by each individual.

quent self-monitoring, the present results appear to contradict the findings of previous studies and related advice offered to practitioners who design self-monitoring tools (e.g., Nelson, 1977). One possibility is that recording simply consumed time that otherwise might have been spent swimming, although a closer look at the procedures suggests that low swimming rates associated with frequent recording were not a straightforward matter of response competition between the two. Swimming never reliably dropped below instructions-only levels, as might be expected if direct response competition were a major factor. And rates of swimming observed in this study were appreciably slower than competition speeds, according to United States Swimming® (<http://www.usswim.org/>), suggesting that participants were capable of substantially

higher swimming rates, even with recording times removed from the rate calculations.

More likely is the possibility that, with some types of target behavior, self-monitoring can interrupt the "flow" of behavior in potentially detrimental ways. For example, for skilled athletes, swimming can be a continuous activity for which response units are larger than a single pool length (e.g., most competitive events for most age levels are longer than one length). When extended response units are fractured, the possibility of distraction (i.e., control by other factors) increases. Swimmers tend to be socially isolated (e.g., face down in the water) while performing, but not necessarily while stopped. Casual observation in the present study showed that swimmers typically stopped only at the end of the pool where the recording boards were located, and once stopped, tended to remain there longer than necessary, talking to one another. Thus, reactive effects of self-monitoring might have been obscured by other factors introduced through the self-recording procedure. This possibility could be evaluated, in part, by manipulating the presence or absence of other swimmers while evaluating self-monitoring effects of a single individual.

In one sense, the present results may be regarded as idiosyncratic simply because

swimming differs in many ways from the targets of most self-monitoring interventions (e.g., see Nelson, 1977). Yet general lessons may still be derived. At a conceptual level, the present report highlights the importance of distinguishing between the reactivity that can arise from systematically observing one's behavior and practical issues that arise when implementing specific self-monitoring procedures. The present report also illustrates that these two factors can be difficult to disentangle in the field. The most reasonable conclusion, therefore, is one echoed by virtually all observers of self-monitoring: Characteristics of self-monitoring procedures must be selected to fit the situation of interest (Nelson, 1977).

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